PIC Trainer Kit User Manual

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About PIC Trainer Kit

PIC Trainer kit is our oldest product offering.

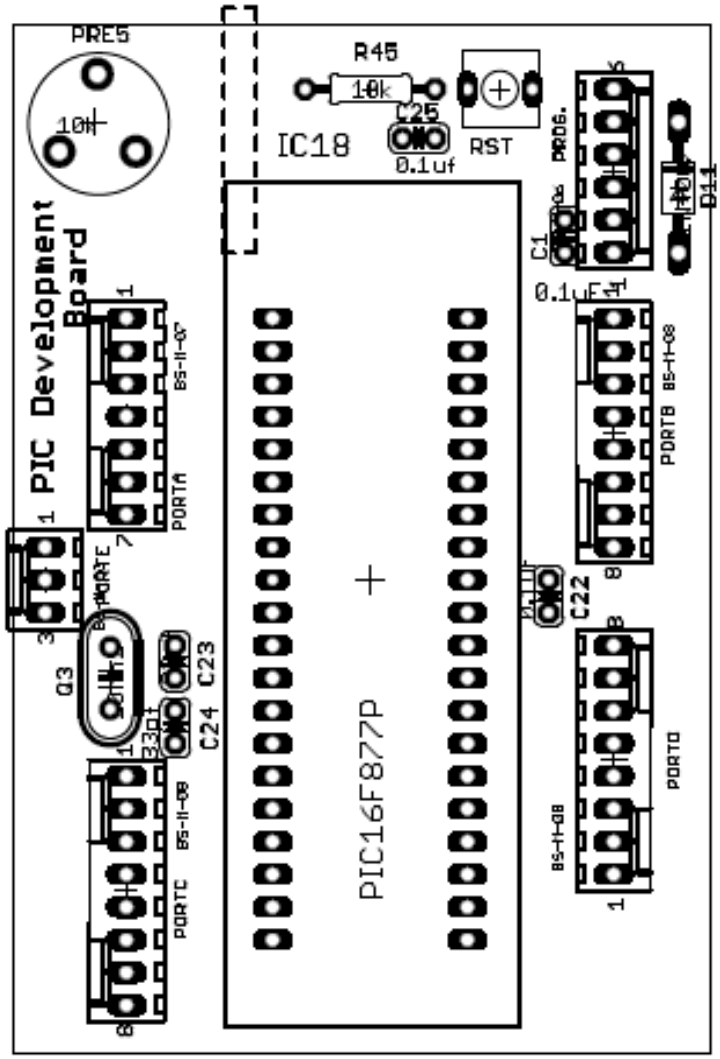
Since beginning of our Multiprocessor product range, our emphasis was always on offering PIC microcontroller support on single development board with variety of famous interface circuits.PIC Trainer Kit has always been a complete set of development system. ISP Programmers, IDEs, Compilers, Sample Source Code, Cables, Connectors and power supply are part of the standard packing. In export shipment, we do not include certain low cost – high weight accessories like cables. Power supplies are also not included as every country has unique wall mounting sockets.

Pin Diagrams of All Sections

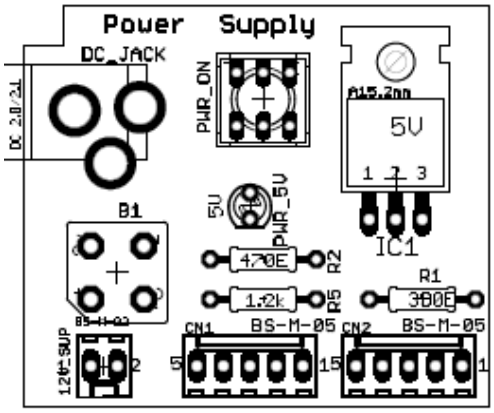
The PIC Trainer kit includes following sections on the Board:

1. PIC18F4550 & other Pin compatible PIC Microcontrollers Development Board
2. Power Supply Section
3. LED Display
4. Seven Segment Display - Four multiplexed
5. LCD/GLCD Display
6. 4x4 Matrix Keypad
7. Pulled Up/Pulled Down Push to On Switches
8. Relay
9. ADC0808 Interface
10. ULN2803 Based Stepper Motor Driver
11. L298 Based DC Motor Driver
12. TSOP1738 Based Object Sensor
13. IR Photo Sensor
14. LM35 Temperature Sensor
15. 2 General Purpose RS232 Interface
16. 433Mhz RF Module with Encoder-Decoder
17. I2C Based Real time clock
18. SPI Based EEPROM
19. Variable resistor

1. **PIC18F4550 & other Pin compatible PIC Microcontrollers Development Board**

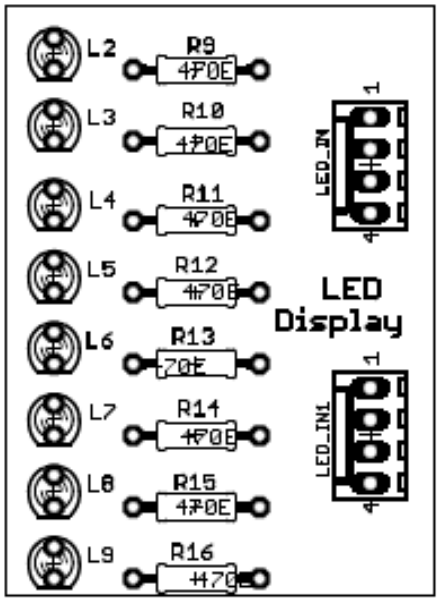


2. **Power Supply Section**



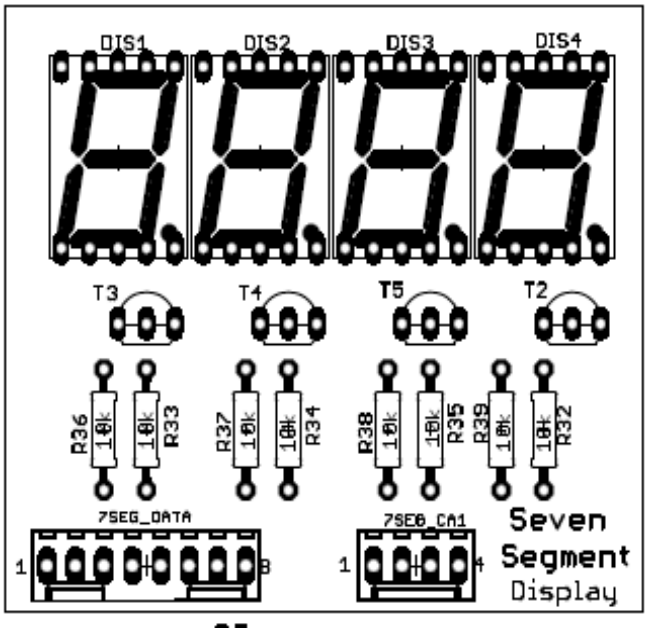
Note: Use only 9-12VDC, 1A Power Supply

3. LED Display



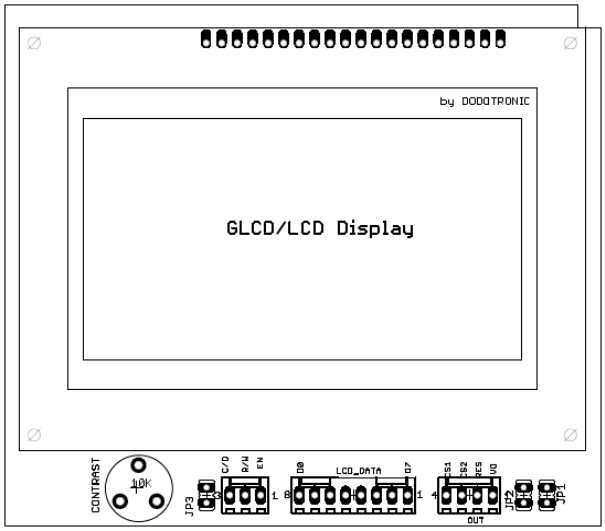
LED_IN		LED_IN1	
1	L2	1	L6
2	L3	2	L7
3	L4	3	L8
4	L5	4	L9

4. Seven Segment Display



7SEG_DATA		7SEG_CA1	
8	Seg A	4	DIS1
7	Seg B	3	DIS2
6	Seg C	2	DIS3
5	Seg D	1	DIS4
4	Seg E		
3	Seg F		
2	Seg G		
1	DP		

5. LCD/GLCD Display



[A]. Character LCD Connections

LCD_DATA		LCD_CTRL	
DB0	1	RS	C/D
DB1	2	RW	R/W
DB2	3	EN	EN
DB3	4	NC	CS1
DB4	5	NC	CS2
DB5	6	NC	RES
DB6	7	NC	V0
DB7	8		

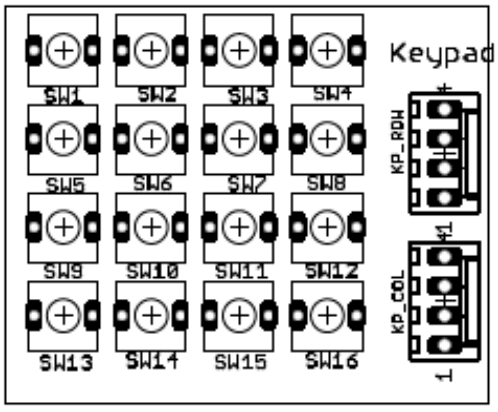
Note: Connect JP3, JP1 & JP2 for LCD Contrast & Back Light.

[B]. Graphics LCD Connections

LCD_DATA		LCD_CTRL	
1	DB0	RS	C/D
2	DB1	RW	R/W
3	DB2	EN	EN
4	DB3	CS1	CS1
5	DB4	CS2	CS2
6	DB5	+5V	RES
7	DB6	NC	V0
8	DB7		

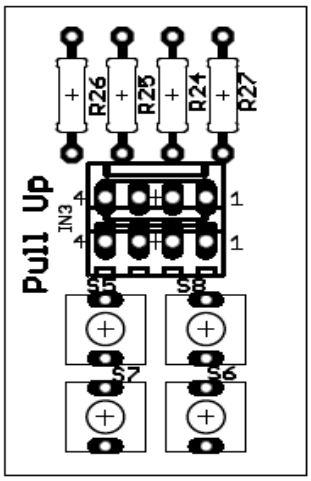
Note: Disconnect JP3, JP1 & JP2.

6. 4x4 Matrix Keypad

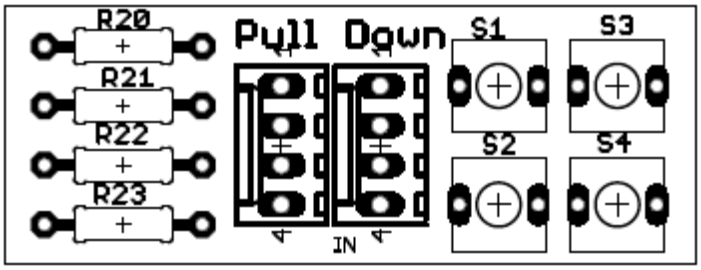


KP_ROW		KP_COL	
1	R1	1	C1
2	R2	2	C2
3	R3	3	C3
4	R4	4	C4

7. Pull Up/Pull Down Push to On Switches

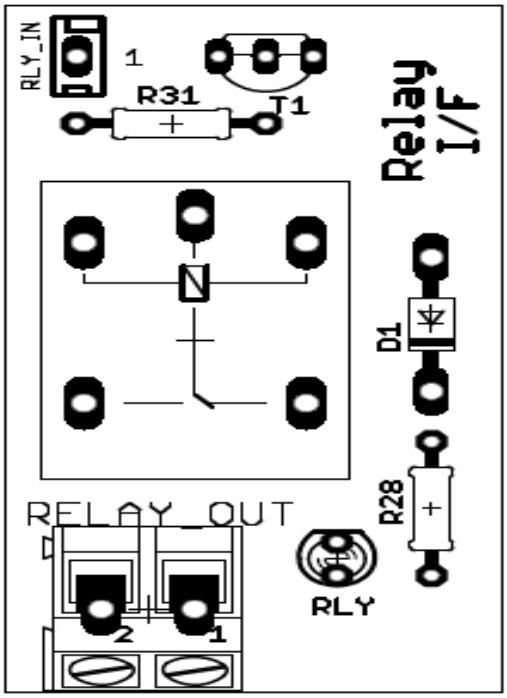


Pull Up	
1	S5
2	S6
3	S7
4	S8



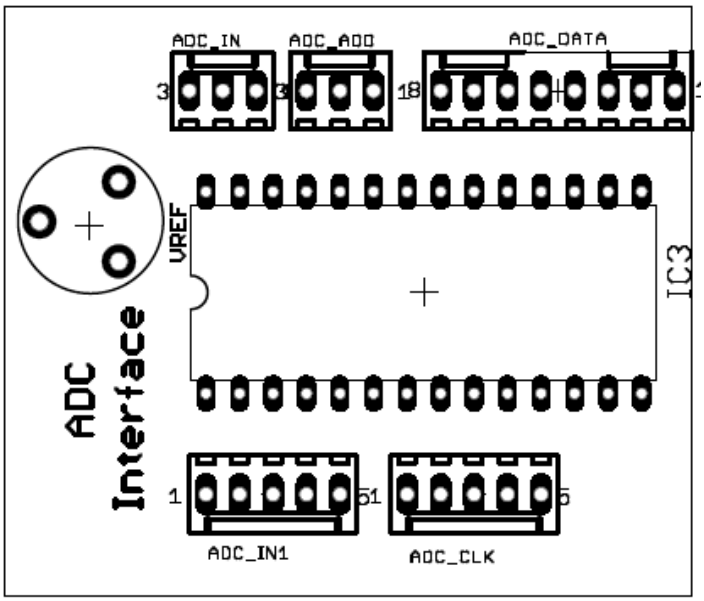
Pull Down	
1	S1
2	S2
3	S3
4	S4

8. Relay Module



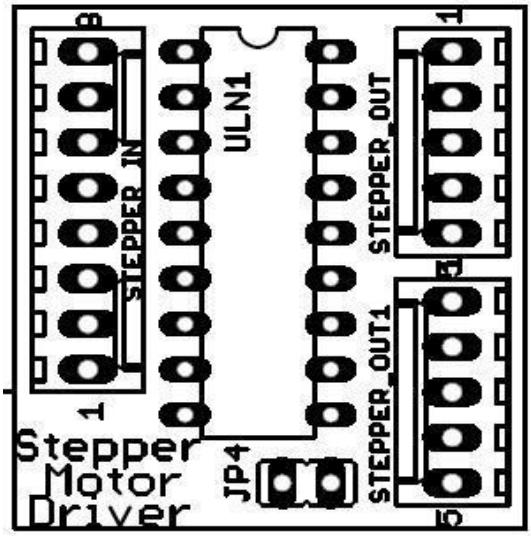
RELAY_OUT	
1	NO
2	NC

9. ADC0808 Interface



ADC_IN1		ADC_DATA	
1	IN3	1	D0
2	IN4	2	D1
3	IN5	3	D2
4	IN6	4	D3
5	IN7	5	D4
ADC_IN		6	D5
1	IN0	7	D6
2	IN1	8	D7
3	IN2	ADC_CLK	
ADC_ADD		1	SOC
1	ADD_C	2	EOC
2	ADD_B	3	ALE
3	ADD_A	4	OE
		5	CLK

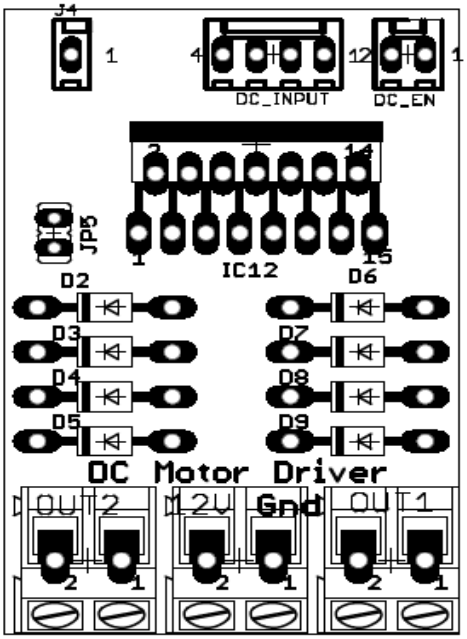
10. ULN2803 Based Stepper Motor Driver



Note: Connect JP4 to supply 12V to the motor.

STEPPER_IN		STEPPER_OUT	
1	IN8	1	O1
2	IN7	2	O2
3	IN6	3	O3
4	IN5	4	O4
5	IN4	5	CD
6	IN3	STEPPER_OUT1	
7	IN2	1	O5
8	IN1	2	O6
		3	O7
		4	O8
		5	CD

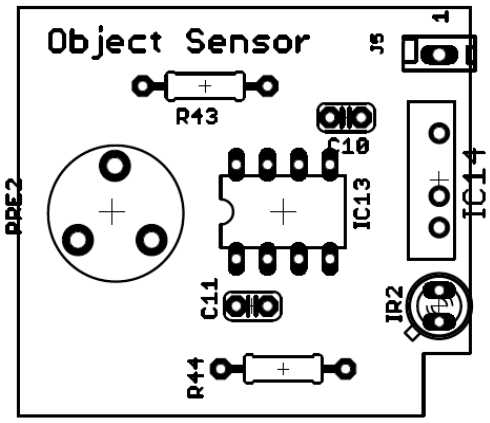
11. L298 Based DC Motor Driver



DC_INPUT		DMD_OUT1	
1	IN4	1	O1
2	IN3	2	O2
3	IN2	DMD_OUT2	
4	IN1	1	O4
DC_EN		2	O3
1	EN B	12V	
2	EN A	1	GND
J1		2	12V
1	12V		

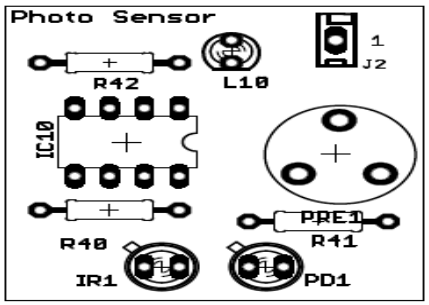
Note: Connect JP5 to supply 12V to motor.

12. TSOP1738 Based Object Sensor



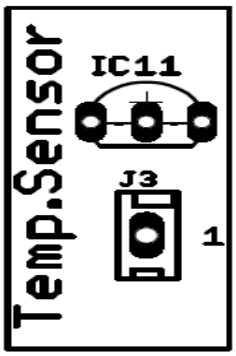
J5	
1	IR_OUT

13. IR Photo Sensor



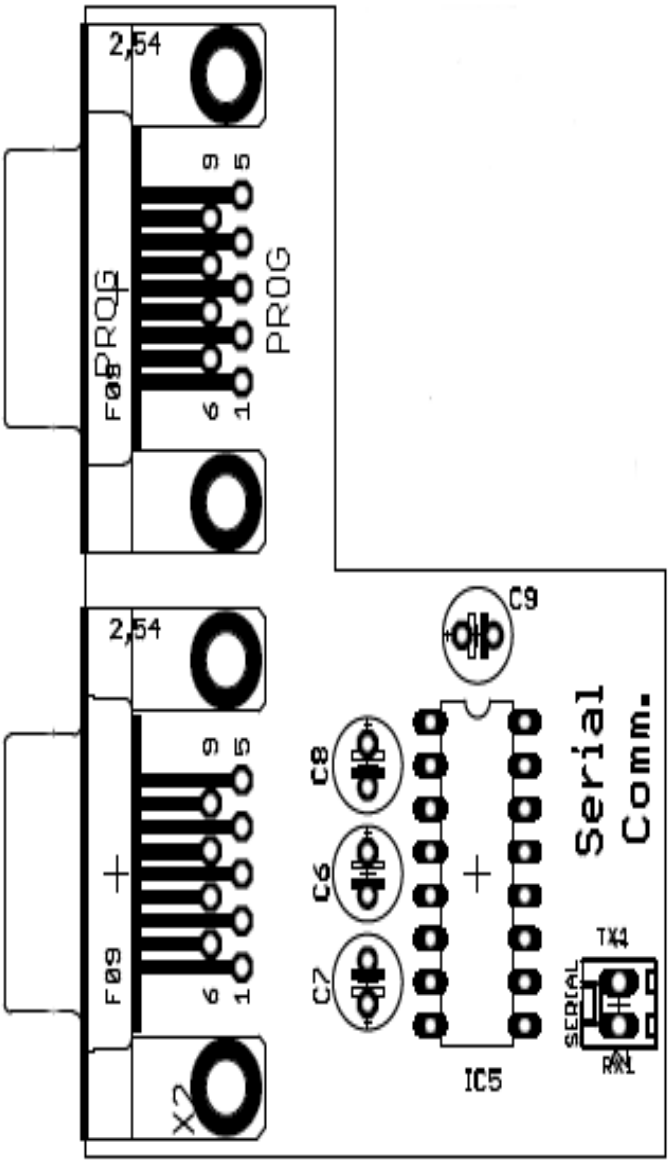
J2	
1	OUT

14. LM35 Temperature Sensor



J3	
1	OUT

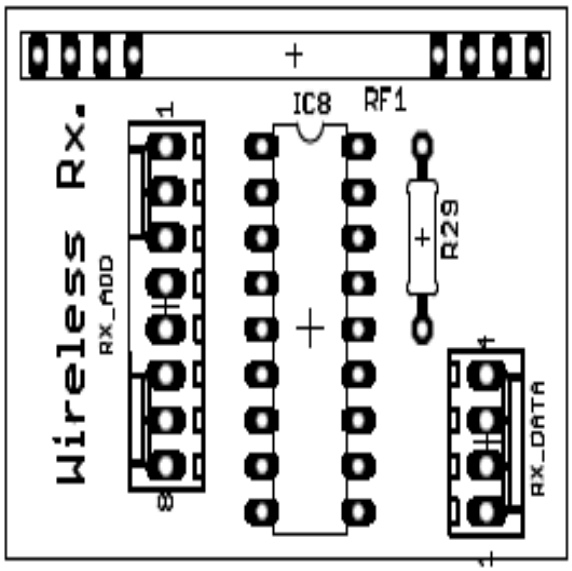
15. General Purpose RS232 Interface



SERIAL_PORT	
1	RX0
2	TX0
3	TX1
4	RX1

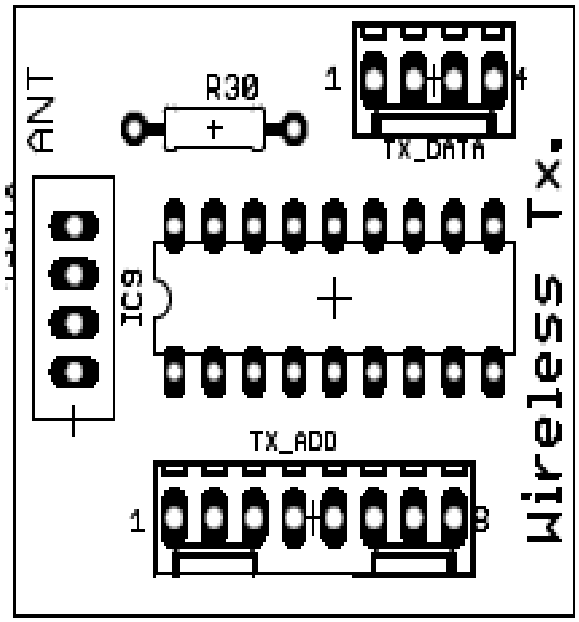
16. 433 MHz RF Module with Encoder-Decoder

RF-Receiver



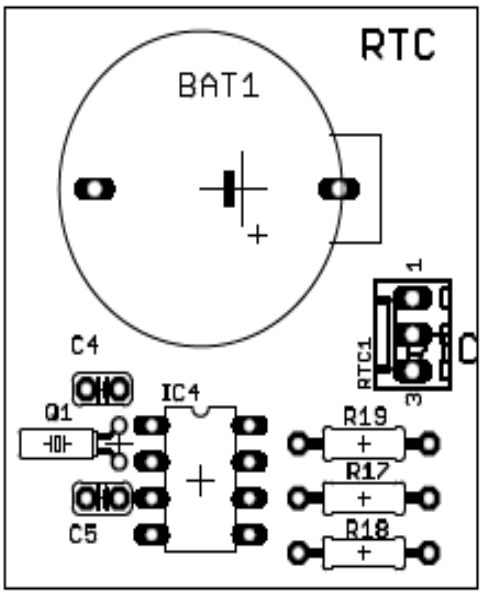
RX_ADD		RX_DATA	
1	A0	1	D8
2	A1	2	D9
3	A2	3	D10
4	A3	4	D11
5	A4	5	VT
6	A5		
7	A6		
8	A7		

RF-Transmitter



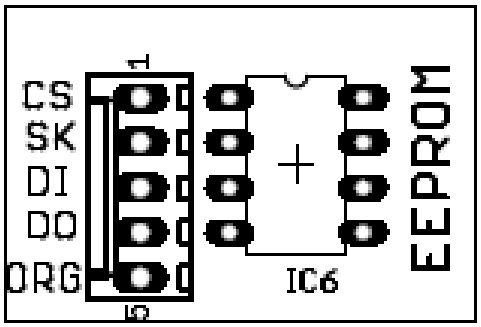
TX_ADD		TX_DATA	
1	A0	1	D8
2	A1	2	D9
3	A2	3	D10
4	A3	4	D11
5	A4		
6	A5		
7	A6		
8	A7		

17. I2C based Real Time Clock DS1307

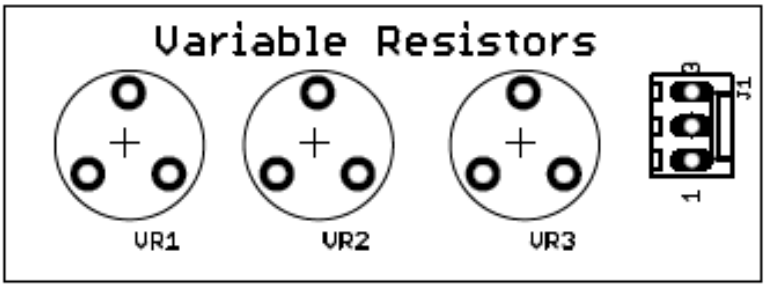


RTC1	
1	SQW
2	SCL
3	SDA

18. SPI EEPROM AT93C46

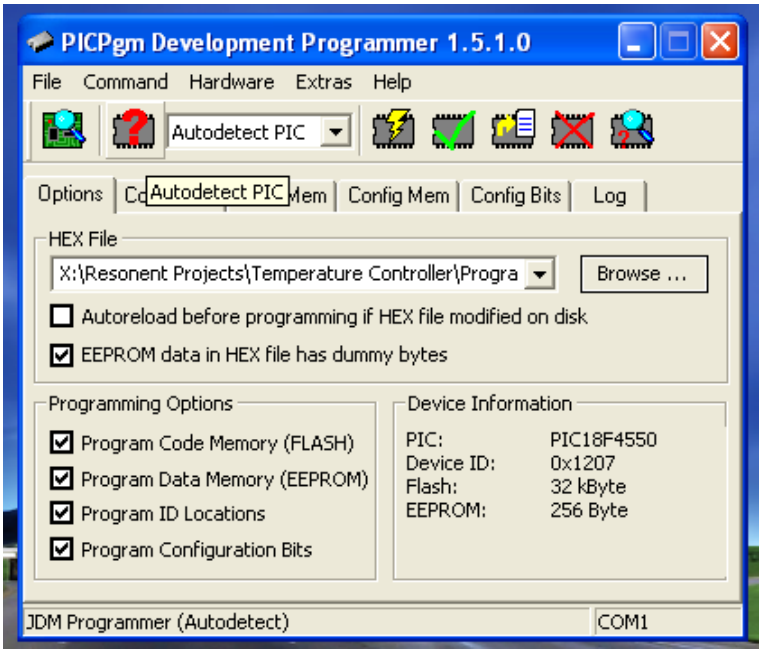


19. Variable resistors

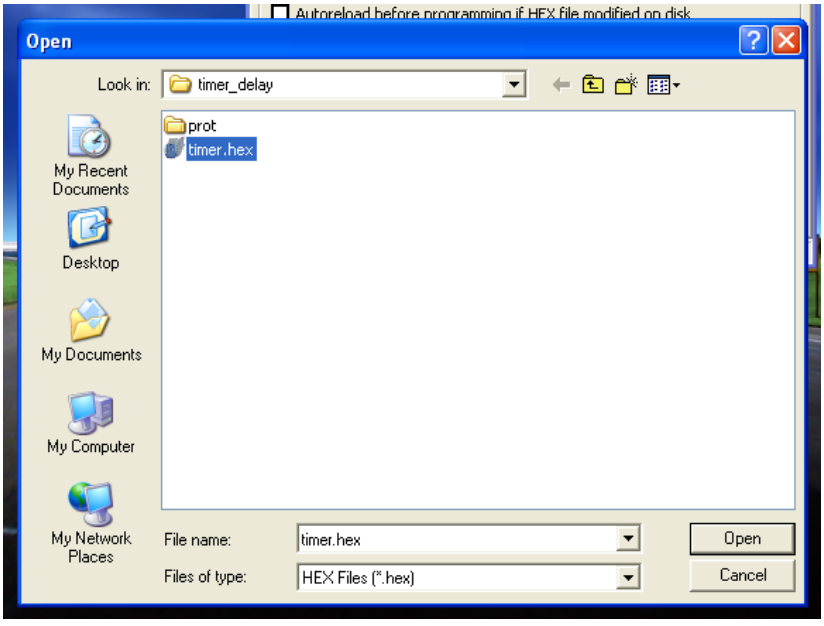


Programming PIC18F4550 Microcontroller

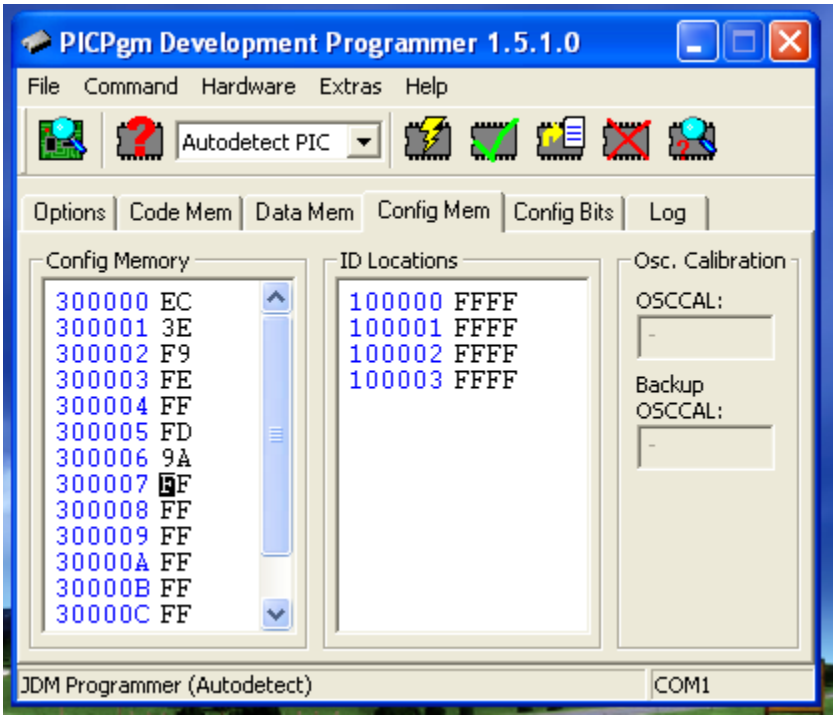
1. Connect PIC ICSP Programmer's 6pin connector to ICSP header on board.
2. Now Open PicPgm Software. It will detect current Programmer as JDM Programmer and Microcontroller PIC18F4550.



3. Now browse the Hex file that you need to Load.



4. Set Fuse Bits as per your requirements from the Configuration Bits Tab. Please refer to device datasheet for Setting Fuse Bits.



5. Click on Program button and wail until it finishes programming.